

RIDA QUICK AFLATOXIN RQS
QUANTITATIVE TEST METHOD

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GENERAL INFORMATION

The RIDA Quick Aflatoxin RQS test method, product number R5205 uses lateral flow test strip technology (immunochromatographic assay) that provides quantitative test results, between 5 – 100 parts per billion (ppb).

The instructions presented in this document cover only the procedure for performing the analytical test for official inspections. For questions regarding this procedure, contact Dr. Ajit Ghosh of the Technology and Science Division by phone at 816-891-0417 or email at Ajit.K.Ghosh@usda.gov.

Refer to the current policies and/or instructions issued by the Policies, Procedures, and Market Analysis Branch (PPMAB) of the Field Management Division for information on use of this test kit in official inspections including sampling, general sample preparation (e.g., grinding and dividing), reporting and certification of test results, laboratory safety, and hazardous waste management. For questions regarding these policies and/or instructions, contact Patrick McCluskey of PPMAB by phone at 816-659-8403 or email at Patrick.J.McCluskey@usda.gov.

Approved Test Kit Information

Test Kit Vendor:	<i>R-Biopharm Inc. 877-789-3033</i>
Test Kit Name:	RIDA Quick Aflatoxin RQS Quantitative Test
Product Number:	R5205
Effective Date of Instructions:	01/07/2015
Instructions Revision Number	1
Conformance Range:	5 – 100 ppb
Number of Analyses to Cover Conformance Range:	1
Type of Service:	Quantitative
Supplemental Analysis:	NO
Approved Commodities:	Corn , barley, corn bran, corn flour, corn germ, corn gluten meal, corn grits, corn meal, corn screenings, corn/soy blend, corn starch, distillers dried grains, distillers dried grains with solubles, malted barley, milled rice, oats, popcorn, rice bran, rough rice, rye, sorghum, soybeans, wheat, wheat flour, and wheat middlings.
Extraction method:	Blend 50-gram sample with 100 mL of 50% ethanol/50% distilled or deionized water (v/v) using a blender set to high speed for 2 minutes.
Test Format:	Lateral flow strip
Detection Method:	RIDA QUICK SCAN, Model ZG5005.

TEST KIT AND READER PREPARATION

1. Aflatoxin RQS Test Kit.
 - a. Allow the test kit to equilibrate to room temperature for at least 30 minutes prior to performing test analysis.
 - b. Remove a sufficient number of test strips packets, no more than 10 at a time, and the mobile solvent provided in the test kit.
1. RIDA Quick Scan Reader.
 - a. Turn on the RIDA QUICK SCAN reader by pressing and holding the center button. Ensure that the methods reads **Afla 4 – 75 ppb** by pressing the down button, highlighting **Method**, and pressing either the left or right buttons until the method is correct.
 - b. Press the down button until **Start Scan** is highlighted, and then press the center button. Connect the provided barcode scanner. On the next screen, press the down button and highlight Start BARCODE input. Press the center button on the reader and scan the 2D barcode when the scanner activates. Ensure that the Checksum on the QC sheet matches, the Checksum on the scanner.
 - c. For more information on RIDA QUICK SCAN reader setting contact R-Biopharm and follow the operating manual.

EXTRACTION PROCEDURES

2. Extraction procedures for Corn , barley, corn bran, corn flour, corn germ, corn gluten meal, corn grits, corn meal, corn screenings, corn/soy blend, corn starch, distillers dried grains, distillers dried grains with solubles, malted barley, milled rice, oats, popcorn, rice bran, rough rice, rye, sorghum, soybeans, wheat, wheat flour, and wheat middlings:
 - a. Transfer 50 grams (+/- 0.2) of ground sample into a clean blender jar.
 - b. Add 100 milliliters (mL) of 50% Ethanol/50% water (v/v) extraction solvent.

Note: Add 200 mL of 50% Ethanol/50% water (v/v) extraction solvent for distillers dried grains, distillers dried grains with solubles, and wheat middlings.
 - c. Cover the blender jar and blend for 2 minutes using a high speed blender.
 - d. Allow sample to settle.
 - e. Transfer 1.0 mL of extraction mixture to a micro-centrifuge tube using the provided disposable transfer pipette (Recommend using a calibrated single channel pipettor).
 - f. Centrifuge for one (1) minute.

- g. This is the centrifuged sample extract and ready for testing.

TESTING PROCEDURES

- a. Pipette 200 microliters (μL) of mobile solvent (provided) and 100 μL of centrifuged sample extract into a micro-centrifuged tube (Use a new pipette tip for each sample).
- b. Vortex for 10 seconds for good mixing.
- c. Pipette 100 μL of prepared buffer/sample mixture onto the sample window of the test strip and incubate for **5 minutes**.
- d. After 5 minutes insert the test strip into the reader. Highlight Start Scan, and press the center button. After a few seconds, select print, and press the center button.

Note: Read test strip as soon as the 5 minutes incubation time is completed. Delaying only by few seconds will change the test results significantly.

- e. Record test results on the work record.

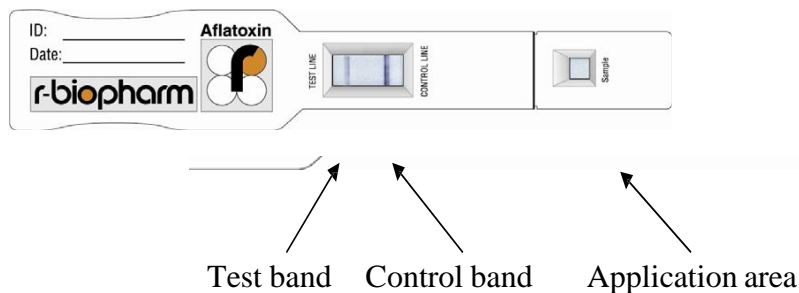
Note: Multiply test results by two (2) for distillers dried grains, distillers dried grains with solubles, and wheat middlings.

- f. Report and certify accordingly.

EVALUATION WITH RIDAQUICK SCAN (ZG5005)

1. Please find a short description regarding the use of RIDAQUICK SCAN in the test kit.
2. The right band in the field of reaction is a control band (control line) and must appear after each test procedure. If the band is missing, the test result is not valid because of improper test procedure or deterioration of the reagents. Repeat the test with a new strip. If the right band is missing again, please inform your local distributor and TSD.
3. The left band in the reaction field is the test band (test line) and must also appear after each test procedure.
4. To obtain comparable results, the test strips must be evaluated always after 5 min.

Fig.1:
Test strip RIDAQUICK Aflatoxin RQS



REPORTING AND CERTIFYING TEST RESULTS

Refer to the current instructions issued by the Policies, Procedures, and Market Analysis Branch of the Field Management Division for reporting and certification of test results. For questions regarding these instructions, contact Patrick McCluskey (816-659-8403 or Patrick.J.McCluskey@udsa.gov).

EQUIPMENT AND SUPPLIES

1. Materials Supplied in RQS Test Kit.
 - a. 20 test strips (one for each determination, separately packed).
 - b. 1 mobile solvent (2.5 mL).
2. Materials Required but not Provided.
 - a. Blender.
 - b. 200 mL blender extraction jars.
 - c. Graduate cylinder.
 - d. Micro Centrifuge.
 - e. Ethanol reagent grade or better.
 - f. Deionized or Distilled Water.
 - g. Timer.
 - h. 50 and 100 μ L pipettor or equivalent.
 - i. Disposable pipette tips.

- j. 1 mL calibrated single channel pipettor.
- k. Disposable transfer pipettes.

STORAGE CONDITIONS AND PRECAUTIONS

1. Storage Conditions.

- a. Test kits should be stored at (2 to 8° C / 36 - 46° F). DO NOT FREEZE the test strips.
- b. Do not use test kits after expiration date. See test kit label.
- c. Do not interchange individual reagents between test kits of different lot numbers.
- d. The test strip, mobile solvent should be at room temperature (20 - 25° C / 68 - 77° F) before use.

2. Precautions.

- a. **Read test strips immediately after the 5 minutes incubation to ensure accurate results!!!!**
- b. The test strips are sensitive to humidity. Humid test strips may influence the test results negatively. For this reason keep the strips away from humidity. This has to be noted especially for test kits that have already been opened.

REVISION HISTORY

Revision 1 (01/07/2015)

- Correct Acronym of Policies, Procedures, and Market Analysis Branch (PPMAB) has been used.
- Phone number of Patrick McCluskey (816-659-8403) has been corrected.

Revision 0 (12/29/2014)